

Super Hornet Sees First Combat Action

Navy News Service

The F/A-18E Super Hornet participated in its first-ever combat action November 5 when aircraft from USS *Abraham Lincoln* (CVN 72) fired on Iraqi targets, in response to hostile acts against coalition aircraft monitoring the southern no-fly zone. The Super Hornet used precision-guided weapons to target two surface-to-air missile systems (SAMS), and a command and control communications facility.

The SAM systems were near Al Kut, approximately 100 miles southeast of Baghdad. The command and control facility was near Tallil, about 160 miles southeast of Baghdad. The strikes occurred at about 6:30 a.m. EDT. Target battle damage assessment is ongoing. Coalition strikes in the no-fly zones are executed as a self-defense measure in response to Iraqi hostile threats and acts against coalition forces and their aircraft. The strike came after Iraqi forces fired anti-aircraft artillery at coalition aircraft in the southern no-fly zone and moved the SAM systems into the no-fly zone in violation of U.N.



F/A-18E Super Hornet, pictured aboard USS *Abraham Lincoln* (CVN 72) participated in its first combat action November 5 in response to Iraqi hostile acts against coalition aircraft monitoring the southern no-fly zone.

resolutions. The last coalition strikes in the southern no-fly zone were October 22 against a command and control communications facility near Al Jarrah, and an air defense operations center near Tallil. Coalition aircraft never target civilian populations or infrastructure, and go to painstaking lengths to avoid injury to civilians and damage to civilian facilities.



F/A-18 Surpasses 5 Million Flight Hours

As F/A-18 pilots took to the skies December 12 they marked a notable moment in Hornet history, marking the day the program turned 5,000,000 flight hours.

(See Hornet Buzz Special Edition Supplement for further details.)

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SHARP Takes Maiden Flight Aboard Super Hornet

F/A-18 Public Affairs Office

The first Engineering and Manufacturing Development (EMD) SHARP pod, E1, took its maiden flight aboard an F/A-18F Super Hornet on November 7 at the Naval Air Warfare Center, China Lake, Calif.

Lt. Bill "Doc" Shoemaker (pilot) and Lt. Cmdr. Dave "Scoop" Swenson, (Weapon System Officer) were at the controls of the aircraft, which flew for a total of 2.3 hours. The pod was flown in

the R-2508 complex surrounding the China Lake airfield with the purpose of collecting Electro-Optic (EO) and Infrared (IR) imagery data.

"Currently the data collected during the flight is being analyzed in an attempt to optimize the camera and SHARP system performance," said John Paul, Project Manager for the SHARP reconnaissance management system development. "During the flight, targets were imaged in both the Visible and Infrared (VIS/IR) modes, and data was

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Next-Generation AESA Radar Capability Demonstrated

The first public demonstration of the integrated APG-79 Active Electronically Scanned Array (AESA) Radar was conducted during a debut ceremony at the laboratories of the Raytheon Company in El Segundo, Calif., on Thursday, November 20, 2002. The event marked another milestone in bringing increased situational awareness, increased reliability and lower cost to the US Navy's F/A-18 fighter jets. The new radar will make the F/A-18 an even more powerful precision strike platform.

"The Navy is another step closer to having this revolutionary capability in the fleet. It is significantly more capable than current fire control radars and we are doing it in less time," said Cmdr. Dave Dunaway, APG-79 IPT leader. "This one is faster, cheaper and provides much more performance."

"This successful demonstration proves we are well-prepared for the first flight test in June 2003, and another step closer to delivering this amazing radar to the fleet," said Wesley Motooka, vice president of Raytheon's Tactical Aircraft Systems and Navigation.

Performance and capabilities of current airborne radars are limited by the speed of the mechanically scanned antennas. In an active array radar like the APG-79, the radar beam can be steered at close to the speed of light. This rapid beam scan feature enables superior performance and capabilities.

The APG-79 radar's Multi-Function Array is comprised of numerous solid state transmit and receive modules, or T/R modules. Because the array is solid state, mechanical breakdowns are virtually eliminated, leading to dramatic improvements in reliability and lower cost; all achieved with tremendous



New Active Electronically Scanned Array Radar with wideband radome, and liquid cooling system upgrade, is positioned in the nose of the aircraft.

performance enhancements. The APG-79 is more lethal, more survivable, more reliable and more affordable than its mechanical cousins.

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**Cmdr. Dave Dunaway,
APG-79 IPT leader.**

During the lab demonstration, a fully integrated APG-79 was operated in Raytheon's El Segundo facility. The integrated system has successfully transmitted, received, and collected real beam ground mapping radar data of the California coastline. Visitors also viewed the radar integration facility, including the avionics simulator, target generator and special test equipment.

"Everything in this system - from the array in the front to the processor in the back and the software that operates in the radar - is new. Bringing it together in record time has been quite a challenge," said Tom Kennedy, Raytheon APG-79 program manager.

Following the laboratory development phase, an extensive flight test program at NAVAIR China Lake will begin in mid-2003 with the APG-79 installed in the Super Hornet. The system is planned to be operational in the fleet in 2005.

NAVAIR provides advanced warfare technology through the efforts of a seamless, integrated, worldwide network of aviation technology experts. From professional training to carrier launch; from sensor data to precision targeting; from aircraft and weapons development to successful deployment; from real-time communication to aircraft recovery NAVAIR provides dominant combat effects and matchless capabilities to the American warfighter.



AWL Works with Squadron for F/A-18 Radar Test Solution

Linda Lou Crosby

With an innovative approach, the NAVAIR F/A-18 Advanced Weapons Laboratory (AWL) at China Lake recently worked with F/A-18 Squadrons aboard the USS *John C. Stennis* (CVN 74) during their deployment to the Arabian Sea in support of Operation Enduring Freedom. AWL engineers worked with shipboard avionics repair shops to troubleshoot aircraft radar systems.

"We developed a portable radar test set, installed in a ruggedized suitcase, to test radar systems in their natural environment, while installed in the jet," said Mike Myers, AWL Laboratory Project Lead. "This design was born out of the necessity for troubleshooting radar systems here in our testing atmosphere and its popularity has been growing with customers outside the AWL."

Last November, the maintenance officer for VMFA-314, one of the Hornet squadrons in Carrier Air Wing (CVW) 9, heard about the AWL test set and asked for a demo and some training. Responding to a request from the Commander of the Air Wing just ten days prior to its deployment, a team of three AWL engineers accompanied the Radar Calibration Collection Module (RCCM) out to the ship, then operating somewhere off the coast of San Diego in their final days of pre-deployment work-ups.

The AWL Team consisted of Jeff Hutmacher, Tim Smith, and Mike Myers. They provided hands-on training to all three Hornet squadrons in CVW-9; VFA-146, VFA-147, and VMFA-314.

"The RCCM is a portable test set that allows maintenance crews to test the radar while it is installed in the aircraft as a complete system," said Myers. "You don't have to take anything apart or remove any avionics."

The aircraft radar system operating effectively is essential for any successful mission in hostile environments, such as



The NAVAIR F/A-18 Advanced Weapons Laboratory engineers working with Hornet Squadrons aboard the USS *John C. Stennis*.

Afghanistan. In the past, radar avionics couldn't be checked as a complete system. The suspected avionics had to be pulled out of the aircraft and sent to the aircraft maintenance group aboard the ship to be fixed. Often times, when radar components were re-installed in the aircraft, the problem would return, so the radar system had to be removed, and the process of testing begun all over.

"The RCCM lets you keep the radar right where it belongs, on the aircraft, and allows it to be tested as a complete system," added Myers.

The RCCM is a briefcase-sized portable unit that allows F/A-18 maintainers to extract radar receiver calibration data from an aircraft. The RCCM is then connected to a computer and the data is downloaded using a Microsoft Windows-based program. This program provides an intuitive, user-friendly interface to download/process/format the data into Calibration Table files as well as to upload new revisions

of the RCCM operating system software. The Calibration Table files can be used by the maintainers on-site or electronically transmitted (via e-mail) to the F/A-18 AWL for in-depth system analysis.

Data from up to twelve aircraft can be stored in the RCCM. This capability allows immediate viewing of calibration data at the aircraft or the collection of data for later analysis.

"Our goal was to provide something to the fleet that could help put the aircraft radar back in operating condition and reduce maintenance time," added Myers.

During deployment, the squadrons would e-mail calibration files to the AWL where they were analyzed, with results reported back to the ship within twelve to twenty-four hours. Engineers providing the analysis were from the Radar Task Team.



Hornet Wing Maintenance Officers Visit NAVAIR

Ward Carroll

The paradigm of fleet support was recently stood on its head: The fleet came to NAVAIR instead of the other way around. For the first time in recent memory, both Strike Fighter Wing Maintenance Officers simultaneously visited Patuxent River.

"The fleet coming to NAVAIR pays big dividends," said Cmdr. Dave Seaton, the STKFITWINGPAC Maintenance Officer. "Not only do these meetings allow us to focus on issues away from the day-to-day grind of our home bases, they allow the folks at NAVAIR who don't normally get out to see who we are."

"I've served at NAVAIR before," said Cmdr. Bob Ramsey, the STKFITWINGLANT Maintenance Officer, "but I've never visited in my capacity as wing MO. These sessions have been very productive. Plus, it's always great to get back to St. Mary's County."

Capt. Steve Bartlett, PMA265 APML, hosted the two commanders while they visited the Hornet Team. "We put a lot on the table in a short period of time," Capt. Bartlett said. "And it was a good way to synch up both coasts' concerns."

While at PMA265 the commanders sat down with program "loggies" and hammered out a way forward on a wide

variety of issues surrounding systems and platforms such as FIRST, MIDS, FTI, APG-73, and LOT 25. The maintenance officers also visited other programs during their trip, including AIR 6.0 and PMA260.

"This is how we get to ground truth," Cmdr. Seaton said. "Face-to-face is the best way to do business."



SHARP cont. from page 1

successfully recorded onto the onboard recorder. This flight marks a very successful event for the efforts of several teams around the country who have been working together to achieve this milestone."

The pod, which weighs approximately 2100 lbs., is 188 inches in length, with a height and width of 29 inches, is carried on the F/A-18E/F centerline. It is equipped with a long-range VIS/IR sensor; or a medium range VIS/IR sensor, and a real-time data link that is compatible with the distributed common ground station.

The design incorporates a rotating mid-section to optimize coverage, to protect the window by allowing stowage under the strongback, and to reduce the size and life cycle expense of large fixed windows. The system is compatible with the C/D/E/F variants of the F/A-18.

Fleet introduction of the system will



SHARP pod stands ready for its maiden flight aboard an F/A-18F Super Hornet.

be on the F/A-18F Super Hornet that is scheduled for its initial deployment on the USS *Nimitz* (CVN 68) in mid-2003.

Pod E1 will continue its stay at the

Naval Air Warfare Center, Weapons Division to complete flight and operational tests prior to being delivered to the fleet.



HiPPAG Celebrates 1000th Delivery

F/A-18 Public Affairs

The U.S. Navy and Ultra Electronics Precision Air Systems, Gloucester, England recently celebrated the 1000th delivery of the High Pressure Pure Air Generator (HiPPAG), at a ceremony held at the British Embassy in Washington, D.C. on October 3.

Capt. Robert Wirt, PMA 201, and Maj. Fred Jones from the F/A-18 Program Team, were on hand for the ceremony. Paul Benson, Managing Director of Ultra Electronics Precision Air Systems presented them with a commemorative HiPPAG model.

Capt. Robert Wirt told the assembled guests that HiPPAG has brought about a significant improvement in flight deck efficiency on board the U.S. Navy's aircraft carriers. It eliminates the need to replace nitrogen cooling bottles on the wingtips of the F/A-18E/F Super Hornets, a 15-minute task that must be carried out on earlier model aircraft following each mission.

HiPPAG, a unique miniature air compressor cooling system for air-to-air missiles, was fitted to F/A-18E/F Super Hornet aircraft, starting in October 2001. VFA-115, the first F/A-18E/F squadron, based at Naval Air Station Lemoore, Calif., performed numerous workup cycles in preparation for its first sea cruise. The HiPPAG system performed

flawlessly in the harsh F/A-18E/F wingtip environment. In July 2002 it was deemed ready for inclusion on the F/A-18E/F aircraft's maiden deployment aboard the USS *Abraham Lincoln* (CVN 72). Additional F/A-18E/F squadrons at NAS Lemoore, VFA-14, 41 and 122, are currently taking deliveries of HiPPAG-equipped launchers.

HiPPAG has been integrated with the LAU-127 launcher and is used to cryogenically cool Sidewinder missile seekers. The HiPPAG is mounted on the

wingtips of the aircraft. A self-generated electric pump, it works by taking ambient air from the surroundings, purifying and compressing it, then releasing the cooled air onto the missile. The system has amassed a large number of operating hours on the F/A-18E/F aircraft, and has proven to be operationally and logistically superior to the nitrogen bottles and support equipment that it replaced.



VFA-102 Safe for Flight

Congratulations to the "Diamondbacks" of VFA-102 on their successful transition to the F/A-18F Super Hornet. The squadron's completion of Safe for Flight is only the beginning of a new era for the "Diamondbacks" in strike fighter warfare.



HIC Conference Deemed Success

F/A-18 Public Affairs

Hornet operators from around the world recently participated in the seventh annual Hornet International Conference (HIC) in Pensacola, Fla. The conference theme this year was "Managing Fleet Operations: Today and Tomorrow."

Jointly sponsored by the U.S. Navy and the Royal Malaysian Air Force; the conference provided an opportunity for Hornet operators to share information and ideas. The conference ran from October 21 to 25.

Rear Admiral Tom Kilcline, U.S. Navy, welcomed more than 100 participants from Australia, Canada, Finland, Malaysia, Switzerland, the U.S. Navy and U.S. Marine Corps, as well as members of the Hornet Industry Team to the conference. Kilcline remarked that the meeting was an outstanding opportunity to get to know one another and set up contacts around the world.

Brigadier General Abdul Rahman, Royal Malaysian Air Force, also welcomed guests. During his opening remarks he spoke about the importance of combat relevance and managing fleet operations. "The task of supervising fleet operations has always been essential, but with the current world situation it is vitally important that all of us are prepared to respond to current demands and future requirements."

The F/A-18 Program Office was represented at the meeting by Capt. Win Everett, F/A-18 Fleet Support; Glenn Wheeler, and Frank Amorosi, F/A-18 Foreign Military Sales Deputies.

Wheeler said, "Each country takes a turn in co-hosting the event, which is mainly a forum for the concerns of the people who are maintaining and operating the F/A-18. If we can identify several countries that have similar obsolescent testing and development issues we can put our efforts together, cost and time share, and come up with a

better product at a reduced cost."

"Today's threats are taking on new and terrifying dimensions. That is why we must ensure that the Hornets now in service remain combat-relevant,"
General Abdul Rahman,
Royal Malaysian Air Force.

Two issues that came out of the meeting this year were the Joint Helmet Mounted Cueing System and the 21C software configuration. As a result of the HIC, two working groups have been formed to develop a team charter, and schedule an ordnance map to track these systems.

Both Wheeler and Amorosi agreed that the meeting was a success. Amorosi said, "We identified numerous areas that were of common interest. Now we are going back to the countries and asking them to update these areas, so the next meeting will have several agenda items that we can address."

In closing the meeting, Brigadier General Rahman, Royal Malaysian Air Force, said, "We have learned much during the past several days about each other and how our countries use the F/A-18 Hornet."

"We have talked about the need to keep our Hornets combat relevant and the increasing importance of this effort with the threats that continue to exist all around us. We are all interested in ensuring security and peace for our homelands. Today's threats are taking on new and terrifying dimensions. That is why we must ensure that the Hornets now in service remain combat-relevant."



F404 Reaches 10 Million Engine Flight Hours

F/A-18 Public Affairs

During a recent Component Improvement Program (CIP) Conference held at GE-Lynn, members of the F404 team recognized the many achievements of the F404 engine, especially the attainment of 10 million engine flight hours.

Rob Lessel and Jim Borgmeier represented the F/A-18 program office at the conference. Rob Lessel's experience with the F404 Engine Program goes back to 1989 when he worked as a project engineer on an F404 engine test. He has been working full time on the F404 Program for the past eight years at Patuxent River, Maryland.

"The 10 million flight hours are a significant milestone," said Lessel. "It makes me think about the history of the F/A-18 Program and its impact on today's Navy. It also makes me think about all of the great people who have supported the F404 engine over the years. We've worked through a lot of ups and downs together and it has been very rewarding to be part of such a great team."

Although the F404 engine is out of production, Lessel said the team continuously looks for ways to improve its safety and reliability. "Through the Component Improvement Program, we have taken advantage of technological advances in analysis tools, design practices, and materials to improve the overall design of the engine."

Jim Borgmeier, who has worked on the F404 Program since 1987 and is currently the PMA265 F404 engine IPT and FST leader located at the NAVAIR Depot at NAS Jacksonville, Fla., said, "The 10 million F404 flight hours would not have been possible without the outstanding teamwork and interaction between all the U.S. Navy entities, FMS agents and contractors. This type of business involvement and communication has long been the

standard on the F404 team. The F404 was one of the first NAVAIR IPTs established and the team's lessons learned on structure and operating rules were passed along for use on other IPTs at NAVAIR."

The goal of the CIP program is to identify, discuss, solve and fix technical problems on the F404 engine. Borgmeier said the U.S. Navy uses the Original Engine Manufacturer's (General Electric) engineering expertise to propose redesigns to improve F404 safety, reliability and maintainability.

The entire F404 community (foreign and domestic) contributes, participates and helps prioritize the CIP efforts to improve the F404.

Borgmeier said, "Results have reduced in-flight shut down events and cost per flight hour while increasing availability and Time on Wing potential."

George Bolln, General Manager of

the Lynn Turbofan/Turbojet Projects Department addressed the CIP conference and commented: "Reaching 10 million engine flight hours on a military engine is a significant achievement that makes us all proud. It takes lots of customers to achieve this milestone so it is fitting to recognize this event at CIP where the focus is on making the F404 engine even better."

The F404 CIP conference is held twice each year for the U.S. Military and international customers. It is an opportunity for all F404 users to meet, exchange best practices, and review engineering programs to improve the F404 engine.



Visit the Hornet Program Online
at:
<http://pma265navair.navy.mil>

Hornet Pilot Learns Secrets of Wright Brothers

USS Kitty Hawk Public Affairs

F/A-18C Hornet and Navy test pilot Lt. Cmdr. Klas "Santa" Ohman, based aboard the *USS Kitty Hawk* (CVN 63) conducted an archeological expedition October 5-8, retracing discoveries made by the pioneers of aviation 100 years ago. The Wright Brothers first flew their three-dimensional control glider October 8, 1902. The event "Return to Kitty Hawk" commemorated the historic feat.

Ohman completed numerous flights in the 1902 Wright brothers glider, the first aircraft to incorporate yaw, pitch and roll controls, a technology that paved the way for powered flight and aviation as it is known today.

The Hornet Pilot was impressed by the experience. "The 1902 glider is challenging to fly," said Ohman, an Athens, Tennessee native. "Reenacting the flights helped us better understand the challenges the Wrights faced in their journey to develop aviation."

Joining Ohman at various times in Return to Kitty Hawk were Army AH-64A Apache pilot, Capt. Tanya Markow, Air Force Capt. Jim Alexander, an MC-130 Combat Shadow pilot, and Air Force Maj. Dawn Dunlop, an F-15E Strike Eagle pilot.



U.S. Navy F/A-18 Hornet pilot, Lt. Cmdr. Klas "Santa" Ohman, exchanges last-minute words with ground crew prior to one of 25 flights he made in a replica of the 1902 Wright brothers' glider, the first aircraft to incorporate yaw, pitch, and roll control.

Rediscovering the thinking and process of the aviation pioneers was enlightening for all involved, according to Ohman. "It's quite an honor to be able to show what the Wrights went through."

Ohman surmised that the Wrights might have used turnbuckles to maintain taught elevator cables, ensuring more precise pitch control. He also concluded that the brothers were good athletes, noting the physical demands from reenacting the 1902 flights.

In sum, Ohman logged a total of 25 flights in the glider. He trained in a hang

glider for two days, and spent hours in between flights discussing the merits of the Wrights' engineering feats with other military and civilian pilots on hand at Return to Kitty Hawk.

He has since returned to Japan to rejoin his F/A-18C Hornet squadron, the "Dambusters" of Strike/Fighter Squadron (VFA-195), part of Carrier Air Wing (CVW-5) embarked aboard *USS Kitty Hawk* (CVN 63), the nation's only permanently forward deployed aircraft carrier, operating out of Yokosuka, Japan.



Another Super Hornet Inches Closer to the Fleet

A/C 200 (F/A-18F / Lot 25) Arrives at China Lake Calif., from St. Louis , MO. with VFA-2 Squadron Markings. Total flight time from St. Louis was 3.7 hours.



Out and About With The Fleet



A National Geographic film crew shoots footage of flight-deck personnel preparing an F/A-18C Hornet to launch from USS *Carl Vinson* (CVN 72). The crew is on board filming for an upcoming documentary on test pilots. The show is set to air in 2003. *Carl Vinson* resumed flight operations Wednesday, October 2, for the first time in nearly nine months. U.S. Navy photo by JO2 Jon Rasmussen.

At sea aboard USS *Kitty Hawk* (CVN 63) November 14, 2002 – A “shooter” launches an F/A-18C Hornet assigned to the “Royal Maces” of Strike Fighter Squadron (VFA-27) from one of four catapults on the ship’s flight deck. “Shooters” use signals as a visual aid for the pilots and flight deck personnel when launching aircraft. *Kitty Hawk* is the Navy’s only permanently forward-deployed aircraft carrier and operates out of Yokosuka, Japan. U.S. Navy photo by Photographer’s Mate 3rd Class Todd Frantom.



At sea aboard USS *Carl Vinson* (CVN 72) Nov. 14, 2002 – An Aircraft Director motions for the pilot to stop while troubleshooters and catapult workers prepare the F/A-18C “Hornet” assigned to the “Blue Diamonds” of Strike Fighter Squadron (VFA-146) for launch from one of four catapults from the ship’s flight deck. *Carl Vinson* is underway off the southern coast of California conducting training in preparation for their next regularly scheduled deployment. U.S. Navy photo by Photographer’s Mate 2nd Class Inez Lawson.

Super Hornet Pilot Surpasses 1000 Flight Hours



Super Hornet traps aboard the USS *Abraham Lincoln*.

F/A-18 Public Affairs Office

It was not quite business as usual for Lt. Cmdr. Matthew "Ho" Tysler when he boarded a Super Hornet, and catapulted off the deck of the USS *Abraham Lincoln* (CVN 72) on November 29, 2002. It was the day that he became the first pilot to reach the 1000-hour mark in the Super Hornet.

This milestone was achieved by a pilot who was involved with the aircraft's early development phase and has now flown with it through its first operational deployment.

As Tactics Officer for VFA-115, Tysler is part of the Super Hornet squadron's first deployment flying the single-seat F/A-18E model. VFA-115 is embarked aboard the USS *Abraham Lincoln*, which is currently deployed to the Persian Gulf in support of

Operation Southern Watch.

Tysler is a seasoned F/A-18 pilot. He flew his first Super Hornet in August 1997 as a member of the NAVAIR Integrated Flight Test Team conducting the Engineering and Manufacturing Development (EMD) phase of the jet. From NAVAIR he transferred to VFA-122 and assisted in standing up the first Fleet Readiness Squadron for Super Hornet. In March 2001 Tysler transferred to his current squadron, VFA-115, located at Naval Air Station Lemoore, Calif.

During his tenure with VFA-115, Tysler has served as the Safety Officer, the Operations Officer, and is currently the Tactics Officer.

Currently the F/A-18 E and F, models have flown over 52,000 hours in flight test, training and operational flight hours.

